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TWO NEW SPECIES OF ACROCHÆTIUM.

F. S. Collins.

Acrochætium minimum n. sp. Strato basali e filamentis epi-vel endophyticis constituto, ad superficiem vel inter cellulas superficiales plantæ hospitis repentibus, initio liberis, mox plus minus concretis, non autem membranam veram formantibus; cellulis 2–4 μ diam., 1–4 diam. longis, forma valde irregularibus; filamentis basalibus ramos plures breves emittentibus, ultra superficiem plantæ hospitis emergentes, 1–4 cellulares, cellulis 2–3 μ diam., 1½–3 diam. longis, sæpe in sporam pyriformem, indivisam, 5 × 7 μ, desinentes; minus frequenter filamenta longiora, usque ad 25 cellulas, cellulis ad 8 diam. longis, 2–3 μ diam., simplicia, interdum sporam lateralem, sessilem vel ad pedicellum unicellulare affixam, sporæ terminali similem, gerentia.

Basal layer composed of epi- or endophytic filaments, creeping on the surface or among the superficial cells of the host plant, at first free, later more or less united, but not forming a genuine membrane; cells 2–4 μ diam., 1–4 diam. long, of quite irregular form; basal filaments emitting many short branches, extending beyond the surface of the host, 1–4-celled, cells 2–3 μ diam., 1½–3 diam. long, often terminating in an undivided pyriform spore, 5 × 7 μ; less frequently emitting longer filaments, up to 25 cells, cells up to 8 diam. long, 2–3 μ diam., occasionally bearing a lateral spore, sessile or on a unicellular pedicel, similar to the terminal spore. On *Desmarestia viridis* (Fl. Dan.) Lamour., Robinson's Hole, Massachusetts, Aug., 1907. I. F. Lewis.

The dimensions here given are less than those of any hitherto described species of the genus, and the erect part is smaller in proportion to the horizontal, but it seems to be an *Acrochætium*. The filaments of the basal layer wind about the round cortical cells of the *Desmarestia*, but do not seem to penetrate below the outer layer; the cells assume all possible forms, according to the space available for

them. The host was more or less infested, almost to the extreme ends of the young branchlets. The germinating spore appears generally to send out the horizontal filaments at once, but no erect filaments; these arise later from the horizontal layer. When the end of one horizontal filament encounters another filament, it may either attach itself and cease growing, or bend until it is parallel to the other filament, adhering to it laterally. Short erect filaments are abundant, seldom over 25 μ long, normally ending in a pyriform spore; much less common are the long filaments, straight, long–jointed, usually simple and sterile, occasionally with one or two lateral spores, usually sessile, rarely borne on a short cell.

Several other epiphytes were growing on the *Desmarestia*; *Streblonema oligosporum* Strømf., *Acrochætium Daviesii* (Dillw.) Näg., *Erythrotrichia ceramicola* (Lyng.) Aresch., a young *Polysiphonia* and some small, sterile, Peysonnellia-like disks. *Desmarestia viridis* is an abundant plant all along the New England coast, and hardly any abundant species is so generally free from epiphytes; it would be interesting to know what combination of circumstances at this place made it an attractive residence for all these species.

A. Hoytii n. sp. Cellula basali (spora originali) rotundata, 12–25 μ diam., vel verticaliter elongata, tunc ad 30 μ longa, filamenta 1–3 erecta, 6–7 μ diam., emittente, cellulis 2–4 diam. longis; ramificatione subfrequente inferne, superne minus frequente, ramis ultimis præ-longis, simplicibus vel subsimplicibus, in setam tenuissimam attenuatis. Sporis lateralibus, oblongis, 6–15 μ, ad pedicellum unicellulare, parte superiore filamenti affixis.

Basal cell (original spore) 12–25 μ diam., spherical or somewhat elongate vertically, then up to 30 μ long; 1–3 filaments arising from each basal cell; main filament about 6 μ diam., cells 2–4 diam. long; branching rather frequent below, rarer above; ultimate branches very long, simple or nearly so, gradually tapering into a hair. Spores lateral on the upper part of the filament and branches, on one-celled pedicels, oblong, 6 $\times$ 15 μ. On *Dictyota dichotoma* (Huds.) Lamour., Beaufort, North Carolina. W. D. Hoyt.

In this species the germinating spore not merely remains distinct through the life of the plant, but increases to several times its original size, and may send up more than one vertical filament. At least this seems to be the only explanation of the appearance presented. The large cell is more or less imbedded in the cortex of the host, but has neither descending nor lateral growth. Among American species it seems nearest related to *A. Dasyæ* Collins, but in the latter the per-

sistent spore increases little if any in size, and has not been observed to produce more than one erect filament. The spores in *A. Dasyæ* are larger and sessile. This plant was received from Mr. Hoyt, who has been making some interesting studies in *Dictyota* at the Beaufort station of the U. S. Bureau of Fisheries, of which some of the results have been published.[1] The type is in the herbarium of the National Museum. For a liberal supply of identical material, to be distributed in the Phycotheca Boreali Americana, the writer is indebted to the authorities of the Bureau of Fisheries.

Malden, Massachusetts.

PRELIMINARY LISTS OF NEW ENGLAND PLANTS,— XXI.[2] CYPERACEAE.[3]

M. L. Fernald.

[The sign + indicates that an herbarium specimen has been seen; the sign — that a reliable printed record has been found.]

	Me.	N. H.	Vt.	Mass.	R. I.	Conn.
Cladium mariscoides (Muhl.) Torr.	+	+	+	+	—	+
Cyperus aristatus Rottb.	+	+	+	+	—	+
" dentatus Torr.	+	+	+	+	+	+
" " var. ctenostachys Fernald				+		
" diandrus Torr.	+	+	+	+	+	+
" Engelmanni Steud.				+		
" erythrorhizos Muhl.				+		+
" esculentus L.	+	+	+	+	+	+
" " var. leptostachys Boeckl.					+	+
" ferax Rich.				+	—	+
" filiculmis Vahl.				+	+	+
" " var. macilentus Fernald	+	+	+	+	+	+
" fuscus L.				+		—
" Grayi Torr.				+	—	+

[1] Bot. Gazette, Vol. XLIII, p. 383, 1907.
[2] Printed in Rhodora as supplementary matter.
[3] For the list of *Carices* see Rhodora, iv. 218 (1902).